



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,763	12/26/2001	Atsushi Watakabe	217752US0	1659
22850	7590	12/09/2004		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER DOVE, TRACY MAE	
			ART UNIT	PAPER NUMBER
			1745	
DATE MAILED: 12/09/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/025,763	Applicant(s) WATAKABE ET AL.	
	Examiner Tracy Dove	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 13-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5 IDSs</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 12/26/01, 6/24/02, 5/9/03, 9/22/03 and 12/8/03 have been considered by the examiner.

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-12, in the reply filed on 11/10/04 is acknowledged. Claims 13-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant has also elected the species of formula (4) for fluoromonomer A and the species of formula (2) wherein SO₂X is SO₃H for fluoromonomer B. Applicant states claims 1-12 read on the elected species. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/10/04.

The traversal is on the ground(s) that the Examiner has provided no reasons in support of her belief that the liquid composition of Group II may be used as a binder material. This is not found persuasive because the liquid composition may not be used as a binder material because it is a liquid. The Examiner stated the fluoropolymer of Group I may be used as a binder. Therefore, Group I and at least Group II have separate utility. The instant specification recites the solid polymer electrolyte material functions also as a binder (page 38).

Art Unit: 1745

Applicant further argues the Examiner has provided no reasons in support of her belief that the solid polymer fuel cell of Group III can be used as a gel electrolyte material. Examiner never stated a fuel cell can be used as a gel electrolyte material. The liquid composition may function as a gel electrolyte while a fuel cell cannot function as a gel electrolyte. Therefore, Group II and at least Group III have separate utility.

Applicant further argues the Examiner has provided no reasons in support of her belief that the fluoropolymer of Group IV may be used as a membrane. The fluoropolymer of Group IV may be used as a membrane while the fluoropolymer of Group III cannot function as a membrane because it is contained in the cathode. The instant specification states the solid polymer electrolyte material may be contained in the electrode or a polymer electrolyte membrane may be formed from the solid polymer electrolyte material (page 11). Therefore, Group III and at least Group IV have separate utility.

Applicant further argues the Examiner has provided no reasons in support of her belief that the solid polymer electrolyte of Group IV can be used as a binder. The solid polymer electrolyte of Group IV can be used as a binder, but the solid polymer electrolyte of Group V is contained in the membrane. Therefore, Group IV and at least Group V have separate utility.

Applicant further argues the election of species requirement on the grounds that the Office has not provided any reasons, whatsoever, to support the conclusion of patentable distinctness. However, if applicant is traversing on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either

Art Unit: 1745

instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

If Applicant admits on the record that the species are obvious variants, the species rejection will be withdrawn. However, if a single species is disclosed by the prior art, all remaining species will be rejected under at least 35 U.S.C. 103(a) as obvious variants.

The requirement is still deemed proper and is therefore made FINAL.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,610,789. Although the conflicting claims are not identical, they are not patentably distinct from each other because both recite a copolymer comprising a repeating unit based on a fluoromonomer A and a repeating unit based on a fluoromonomer B (as defined by the claimed invention).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1745

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 3 recite “and X has the same meaning as X in the above formula (1)”, which is improper because claim 1 may be amended or canceled.

Claims 8 and 10-12 recite “which is useful as a material constituting a solid polymer fuel cell”. An electrolyte material can not comprise a fuel cell because the electrolyte material is only a component of the fuel cell.

Claims Analysis

The phrase “which is useful as a material constituting a solid polymer fuel cell” in claims 8 and 10-12 is not given patentable weight because the limitation recites an intended use.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Banerjee et al.,
US 6,156,451.

Art Unit: 1745

Banerjee teaches a solid polymer electrolyte material comprising a highly fluorinated sulfonate polymer. Most preferably the polymer is perfluorinated and the functional group is represented by the formula SO_3X wherein X may be H. Possible polymers include homopolymers and copolymers of two or more monomers. Copolymers are typically formed from one monomer (fluoromonomer A) which is a nonfunctional monomer and which provides carbon atoms for the polymer backbone. A second monomer (fluoromonomer B) provides both carbon atoms for the polymer backbone and also contributes the side chain carrying the cation exchange group (functional group) or its precursor. Copolymers of a first fluorinated vinyl monomer together with a second fluorinated vinyl monomer having a functional group may be used. Possible first monomer include tetrafluoroethylene (TFE), perfluoro (alkyl vinyl ether) and mixtures thereof (3:20-63). The fluoromonomer B having the formula (2) of the presently claimed invention is disclosed in at least column 4, lines 1-67. Other possible fluorinated monomers (fluoromonomer A) include perfluoro (1,3-dioxole) and perfluoro (2,2-dimethyl-1,3-dioxole) (6:12-20).

Thus the claims are anticipated.

*

Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Watakabe et al., US 6,610,789.

Watakabe teaches a polymer resin comprising segments A (fluoromonomer A) and segments B (fluoromonomer B) wherein segments A comprise a polymer having sulfonic acid groups and segments B comprise a fluoropolymer having substantially no ion exchange groups. The polymer may further comprise segments C, segments D and segments E (3:24-63).

Art Unit: 1745

Segments A have an ion exchange capacity of at least 0.5 meq/g dry resin (5:15-17). The polymer constituting segments A is a polymer comprising repeating units based on a monomer having sulfonic acid group (SO₃H group) (5:17-48). Segments A may be any of the formulas 1-6 (5:44-48; 6:27-31). The polymer preferably includes tetrafluoroethylene (TFE) as a comonomer (5:52-54). In addition, the polymer may further include monomers such as perfluoro (1,3-dioxole) and perfluoro (2,2-dimethyl-1,3-dioxole) (6:1-14; 7:66-8:65). The polymer may be used in a polymer electrolyte fuel cell.

Thus the claims are anticipated.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

WO 99/59216 teaches a solid polyelectrolyte comprising a polymer including two or more fluoropolymer segments differing in monomer composition, wherein at least one of the fluoropolymer segments has sulfonic acid type functional groups.

EP 0345964 teaches an organic polymer material comprising at least one fluoropolymer which contains ion exchange groups and at least one fluoropolymer which is substantially free of ion exchange groups.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

Art Unit: 1745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tracy Dove
Patent Examiner
Technology Center 1700
Art Unit 1745

December 7, 2004